

## ABSTRACT OF THE DISCLOSURE

[0067] An electro-chemical deposition method and apparatus that encapsulates a substrate's edge to prevent deposition thereon is generally provided. In one embodiment, the apparatus includes a contact ring, one or more electrical contact pads disposed on the contact ring and a thrust plate axially movable relative to the contact ring. A first seal is disposed inward of the contact pad and seals with the contact ring. A second seal is coupled to the thrust plate. The first and second seals are adapted to sandwich the substrate therebetween when the contact ring and the thrust plate are moved towards each other. In another embodiment, a third seal provides a seal between the thrust plate and contact ring, and, with the first and second seals, defines an exclusion zone encapsulating the substrate's edge. One or more electrical contact pads are protected from the electrolyte by being disposed within the exclusion zone.